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4, 7TH MAIN MALLESWARAM, BANGALORE -3
Certificate No.: T- 4358

TEST REPORT OF PHYSICAL PROPERTIES OF CEMENT - 53 Grade

Lab ID	:	**CP-2017-05-04-06** **Date: 06-05-2017**
Customer	:	Assistant Executive Engineer, Shettyhalli Sub Division, BBMP, Bangalore.
Address	:	Shettyhalli Sub Division, BBMP, Bangalore.
Project Name	:	Improvements to CC Roads in Dasarahalli Adjacent Main Roads in ward no.13 shettyhalli sub division.
Agency	:	Technical Manager (west), KRIDL, Project implementation unit, No.280, 59th cross, 17th 'C' Main Road, 3rd 'Y' Block, Rajajinagar, Bangalore-560010.
Customer's Reference	:	BBMP/EE/DD/WO/48/2017-18
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	04-05-17
Sample ID No	:	2017-05-04-06/01
Sample Type	:	Zuari 53grade
Reference to BIS codes	:	IS 12269 : 2013, 53 Grade Ordinary Portland cement Specification , IS 4031 (Part 1,2 3,4,5, 6,11):1988 IS 4031 Part 1 DETERMINATION OF FINENESS BY DRY SIEVING, Clause 4.4 IS 4031 Part 2, Determination of Fineness by Blaine Air Permeability Method, Clause 5 IS 4031 Part 3, Determination of Soundness, Clause 5,Clause 6 IS 4031 Part 4, Determination of Consistency of Standard Cement Paste, Clause 5 IS 4031 Part 5, Determination of Initial & Final Setting Time, Clause 5 IS 4031 Part 11,DETERMINATION OF DENSITY , Clause 6
Date of test	:	05-05-17

Sl.No.	Physical properties	Results	Requirement as per IS 12269: 2013
1	Fineness by dry sieving (%)	2.17	–
2	Finess by Air permeablity method (m^2/kg, Min)	272.8	225m^2/kg, Min
3	Density (gm/cc)	3.18	–
4	Standard Consistency (%)	29.0%	Not specified
5	Initial Setting time	155 minutes	Not less than 30 minutes
6	Final Setting time	280 minutes	Not more than 600 minutes
7	Soundness (Le Chatelier's Method)	1.5mm	Not more than 10 mm

Note:

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Prepared by
Harshitha

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FOR CIVIL Pro.

R KARTHIK RECHAN
Authorized Signatory
Quality Manager

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ಸಹಾಯಕ ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
ಶೆಟ್ಟಿಹಳ್ಳಿ ಉಪವಿಭಾಗ, ದಾಸರಹಳ್ಳಿ ವಲಯ
ಬೃಹತ್ ಬೆಂಗಳೂರು ಮಹಾನಗರ ಪಾಲಿಕೆ
ಎಸ್.ಎಂ. ರಸ್ತೆ, ರವೀಂದ್ರನಗರ, ಬೆಂಗಳೂರು

****End of Report****

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TEST REPORT OF PHYSICAL PROPERTIES OF CEMENT - 53 Grade

Lab ID	:	**CP-2017-05-04-06** **Date: 03-06-2017**
Customer	:	Assistant Executive Engineer, Shettyhalli Sub Division, BBMP, Bangalore.
Address	:	Shettyhalli Sub Division, BBMP, Bangalore.
Project Name	:	Improvements to CC Roads in Dasarahalli Adjacent Main Roads in ward no.13 shettyhalli sub division.
Agency	:	Technical Manager (west), KRIDL, Project implementation unit, No.280, 59th cross, 17th 'C' Main Road, 3rd 'Y' Block, Rajajinagar, Bangalore-560010.
Customer's Reference	:	BBMP/EE/DD/WO/48/2017-18
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	04-05-17
Sample ID No	:	2017-05-04-06/01
Sample Type	:	Zuari 53grade
Reference to BIS codes	:	IS 12269 : 2013, 53 Grade Ordinary Portland cement Specification , IS 4031 Part 4, Determination of Consistency of Standard Cement Paste, Clause 5 IS 4031 Part 6, Determination of Compressive Strength, Clause 6
Date of test	:	05-05-17

Compressive Strength

Sl.No.	Physical properties	Results	Requirement as per IS 12269: 2013
1	3 Days	28.5N/mm^2	Not less than 27 N/mm^2
2	7 Days	38.5N/mm^2	Not less than 37 N/mm^2
3	28 Days	55.5N/mm^2	Not less than 53 N/mm^2

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ಸಹಾಯಕ ಕಾರ್ಯನಿರ್ವಾಹಕ ಅಭಿಯಂತರರು
ಶೆಟ್ಟಿಹಳ್ಳಿ ಉಪವಿಭಾಗ, ದಾಸರಹಳ್ಳಿ ವಲಯ
ಬೃಹತ್ ಬೆಂಗಳೂರು ಮಹಾನಗರ ಪಾಲಿಕೆ
ಯು.ಪಿ.ಎಂ. ರಸ್ತೆ, ರಮಿರಿವ್ಹನಗರ, ಬೆಂಗಳೂರು

****End of Report****

TEST REPORT ON COARSE AGGREGATES

Lab ID	:	**CP-2017-05-04-06** **Date: 08-05-2017**
Customer	:	Assistant Executive Engineer, Shettyhalli Sub Division, BBMP, Bangalore.
Address	:	Shettyhalli Sub Division, BBMP, Bangalore.
Project Name	:	Improvements to CC Roads in Dasarahalli Adjacent Main Roads in ward no.13 shettyhalli sub division.
Agency	:	Technical Manager (west), KRIDL, Project implementation unit, No.280, 59th cross, 17th 'C' Main Road, 3rd 'Y' Block, Rajajinagar, Bangalore-560010.
Customer's Reference	:	BBMP/EE/DD/WO/48/2017-18
Source of Sample	:	Sample supplied by Agency
Sample condition	:	Satisfactory
Date of Receipt	:	04-05-17
Sample ID No	:	2017-05-04-06/02(a)
Sample Type	:	40mm down size coarse aggregate
Reference to BIS codes	:	IS: 383:2016 (Specification for Coarse and fine Aggregates) IS: 2386 :1963(Part - 1,3,4) RA2011 IS 2386 Part 1: Particle Size and Shape IS 2386 Part 3: Specific gravity, Density, Voids,Water Absorption IS 2386 Part 4: Mechanical Properties
Date of test	:	04-05-17

SIEVE ANALYSIS (PARTICLE SIZE DISTRIBUTION) OF 40MM DOWN COARSE AGGREGATE:

Total weight taken : 15000 grams

Sample No.	Sieve No.	Weight Retained in gms	Cumulative Weight Retained in gms	% Cumulative Weight Retained	% Passing	Required as per IS 383:2016
1	80 mm	0	0	0.0	100	100
2	40 mm	398	398	2.7	97.3	90-100
3	20 mm	5190	5588	37.3	62.7	30-70
4	10 mm	4600	10188	67.9	32.1	10-35
5	4.75 mm	4400	14588	97.3	2.7	0-5
6	Pan	412	15000	100.0	0	

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ಪಿ.ಬಿ.ಎಂ. ರಸ್ತೆ, ರವೀಂದ್ರನಗರ, ಬೆಂಗಳೂರು

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TEST REPORT ON COARSE AGGREGATES

Lab ID : **CP-2017-05-04-06** **Date: 08-05-2017**

Sample ID No : 2017-05-04-06/02(a)

PHYSICAL PROPERTIES

Sl.no	Tests	Result	Requirements as per IS:383-2016
1	Flakiness Index(%)	12.2	Combined Flakiness & Elongation Index Shall not Exceed 40% for Uncrushed & Crushed Aggregate
2	Elongation Index(%)	10.9	
3	Specific Gravity	2.68	_
4	Bulk Density(Loose) (Kg/l)	1.49	_
5	Bulk Density(Compacted) (Kg/l)	1.52	_
6	Water Absorption(%)	0.22	_

Note:

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Prepared by
Harshitha

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R KARTHIK RECHAN
Authorized Signatory
Quality Manager

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ಸಹಾಯಕ ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
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Page 2/2
****End of Report****

TEST REPORT ON COARSE AGGREGATES

Lab ID	:	**CP-2017-05-04-06** **Date: 08-05-2017**
Customer	:	Assistant Executive Engineer, Shettyhalli Sub Division, BBMP, Bangalore.
Address	:	Shettyhalli Sub Division, BBMP, Bangalore.
Project Name	:	Improvements to CC Roads in Dasarahalli Adjacent Main Roads in ward no.13 shettyhalli sub division.
Agency	:	Technical Manager (west), KRIDL, Project implementation unit, No.280, 59th cross, 17th 'C' Main Road, 3rd 'Y' Block, Rajajinagar, Bangalore-560010.
Customer Reference	:	BBMP/EE/DD/WO/48/2017-18
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	04-05-17
Sample ID No	:	2017-05-04-06/02(b)
Sample Type/ Size	:	20mm down size coarse aggregate
Reference to BIS codes	:	IS: 383:2016 (Specification for Coarse and fine Aggregates) IS: 2386 :1963(Part - 1,3,4) RA2011 IS 2386 Part 1: Particle Size and Shape IS 2386 Part 3: Specific gravity, Density, Voids,Water Absorption IS 2386 Part 4: Mechanical Properties
Date of test	:	04-05-17

SIEVE ANALYSIS (PARTICLE SIZE DISTRIBUTION) OF 20MM DOWN COARSE AGGREGATE:

Total weight taken : **5000** **grams**

Sample No.	Sieve No.	Weight Retained in gms	Cumulative Weight Retained in gms	% Cumulative Weight Retained	% Passing	Required as per IS 383:2016
1	40 mm	0	0	0	100	100
2	20 mm	320	320	6.4	93.6	90-100
3	10 mm	2440	2760	55.2	44.8	25-55
4	4.75 mm	2080	4840	96.8	3.2	0-10
5	Pan	160	5000	100	0	_

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TEST REPORT ON COARSE AGGREGATES

Lab ID : **CP-2017-05-04-06** **Date: 08-05-2017**

Sample ID No : 2017-05-04-06/02(b)

PHYSICAL PROPERTIES

Sl.no	Tests	Result	Requirements as per IS:383-2016
1	Flakiness Index(%)	13.4	Combined Flakiness & Elongation Index Shall not Exceed 40% for Uncrushed & Crushed Aggregate
2	Elongation Index(%)	11.9	
3	Specific Gravity	2.65	_
4	Bulk Density(Loose) (Kg/l)	1.51	_
5	Bulk Density(Compacted) (Kg/l)	1.55	_
6	Water Absorption(%)	0.25	_
7	Aggregate crushing Value(%)	23.5	Max 30% for Aggregates to be used in concrete for wearing Surface, In case Aggregate Crushing Value Exceeds 30% then the test for ten percent fines should be conducted for Aggregates to be used in concrete other than for wearing Surface.
8	Aggregate Impact Value(%)	22.6	30% for Aggregates to be used in concrete for wearing Surface, 45% for Aggregates to be used in concrete other than for wearing Surface.

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Harshitha

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R KARTHIK RECHAN
Authorized Signature
Quality Manager

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TEST REPORT OF FINE AGGREGATE

Lab ID	:	**CP-2017-05-04-06** **Date: 08-05-17**
Customer	:	Assistant Executive Engineer, Shettyhalli Sub Division, BBMP, Bangalore.
Address	:	Shettyhalli Sub Division, BBMP, Bangalore.
Project Name	:	Improvements to CC Roads in Dasarahalli Adjacent Main Roads in ward no.13 shettyhalli sub division.
Agency	:	Technical Manager (west), KRIDL, Project implementation unit, No.280, 59th cross, 17th 'C' Main Road, 3rd 'Y' Block, Rajajinagar, Bangalore-560010.
Customer's Reference	:	BBMP/EE/DD/WO/48/2017-18
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	04-05-17
Sample ID No	:	2017-05-04-06/03
Sample Type	:	Fine Aggregate
Reference to BIS codes	:	IS 383 : 2016 (Specification for Coarse and fine Aggregates) IS: 2386 :1963(Part - 1, 3) RA2012 IS 2386 Part 1: Particle Size and Shape IS 2386 Part 3: Specific gravity, Density, Voids,Water Absorption
Date of test	:	04-05-17
Total weight taken	:	1000 grams

Sl.no	Sieve Size	Weight Retained (gms)	Cumulative Weight Retained (gms)	% Cumulative Weight Retained	% Passing	Requirement as per IS 383:2016			
						Grading Zone I	Grading Zone II	Grading Zone III	Grading Zone IV
1	10 mm	0	0	0	100	100	100	100	100
2	4.75 mm	82	82	8.2	91.8	90-100	90-100	90-100	95-100
3	2.36 mm	130	212	21.2	78.8	60-95	75-100	85-100	95-100
4	1.18 mm	190	402	40.2	59.8	30-70	55-90	75-100	90-100
5	600 micron	210	612	61.2	38.8	15-34	35-59	60-79	80-100
6	300 micron	170	782	78.2	21.8	5-20	8-30	12-40	15-50
7	150 micron	133	915	91.5	8.5	0-10	0-10	0-10	0-15
8	Pan	85	1000	100	0	---	---	---	---
Result :The tested Sample Conforms to Grading Zone II									

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TEST REPORT OF FINE AGGREGATE

Lab ID : **CP-2017-05-04-06** **Date: 08-05-17**

Sample ID No : 2017-05-04-06/03

PHYSICAL PROPERTIES

Sl.no	Tests	Result	Requirements as per IS 383:2016
1	Water Absorption(%)	2.45	_
2	Specific Gravity	2.55	_
3	Material finer than 75 micron(%)	5.0	Uncrushed fine Aggregate Max 3%, Crushed Fine aggregate Max 15%, Mixed Fine aggregate Max 12%, Manufactured Fine aggregate Max 10%

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ಎಂ.ಎಂ. ರಸ್ತೆ, ರವೀಂದ್ರನಗರ, ಬೆಂಗಳೂರು

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